Department of Mathematics, BGU

BGU Probability and Ergodic Theory (PET) seminar

On *Tuesday, November ,21 2017*

At *11:00 – 12:00*

In *201*

Jean-Pierre Conze (Rennes)

will talk about

Asymptotic distributions for normalized ergodic sums over rotations

Abstract: Let $x \to x + \alpha$ be a rotation on the circle and let φ be a function with bounded variation. Denote by $S_n(\varphi, x) := \sum_{j=0}^{n-1} \varphi(x + j\alpha)$ the ergodic sums.

For a large class of α's including irrationals with bounded partial quotients, we show decorrelation inequalities between the ergodic sums at time q_k, where the q_k's are the denominators of α.

This allows to study the asymptotic distribution of the ergodic sums $S_n(\varphi, x)$ after normalization, in particular for some step functions, along subsequences.

We will give also an application to a geometric model, the billiard flow in the plane with periodic rectangular obstacles when the flow is restricted to special directions.